IN THE CLAIMS

Please claims 1-17 by rewriting same to read as follows.

--1. (Amended) A receiving device comprising:

a receiving circuit for receiving a first signal and a second signal transmitted at mutually different frequencies;

a circuit for forming first and second local oscillation signals having frequencies at a center frequency between said first signal and said second signal and having phases that differ by 90° from each other;

a first mixer circuit for frequency-converting a received signal received by said receiving circuit into a first intermediate frequency signal in accordance with said first local oscillation signal;

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a second mixer circuit for frequency-converting the received signal received by said receiving circuit into a second intermediate frequency signal in accordance with said second local oscillation signal;

a first phase-shift circuit to which said first intermediate frequency signal is supplied;

a second phase-shift circuit to which said second intermediate frequency signal is supplied, in which the amount of phase shift in said second phase-shift circuit differs by 90° from an amount of phase shift of said first phase-shift circuit; and

an addition/subtraction circuit for switchably performing one of addition and subtraction between an output signal of said first phase-shift circuit and an output signal of said second phase-shift circuit,

wherein, by switching said addition/subtraction circuit to perform addition or subtraction, the intermediate frequency signal corresponding to said first signal or the intermediate frequency signal corresponding to said second signal is selectively extracted from said addition/subtraction circuit.

--2. (Amended) A receiving device for receiving a multiplexed signal in which a first ensemble having signals of a first plurality of programs and a second ensemble having signals of a second plurality of programs are frequency-multiplexed and transmitted and for extracting from the multiplexed received signal one of the signals within said signals of the first plurality of programs and said signals of the second plurality of programs, said receiving device comprising:

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a circuit for forming first and second local oscillation signals having frequencies at a center frequency between said first ensemble and said second ensemble and having phases that differ by 90° from each other;

a first mixer circuit for frequency-converting said received

signal into a first intermediate frequency signal in accordance with said first local oscillation signal;

a second mixer circuit for frequency-converting the received signal into a second intermediate frequency signal in accordance with said second local oscillation signal;

a first phase-shift circuit to which said first intermediate frequency signal is supplied;

a second phase-shift circuit to which said second intermediate frequency signal is supplied, in which the amount of phase shift in said second phase-shift circuit differs by 90° from an amount of phase-shift of said first phase-shift circuit; and

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an addition/subtraction circuit for switchably performing one of addition and subtraction between an output signal of said first phase-shift circuit and an output signal of said second phase-shift circuit,

wherein, by switching said addition/subtraction circuit to perform addition or subtraction, the first intermediate frequency signal or the second intermediate frequency signal is selectively extracted from said addition/subtraction circuit.

--3.(Amended) The receiving device according to Claim 2, further comprising:

an intermediate frequency filter to which the output signal of

said addition/subtraction circuit is supplied; and

a demodulation circuit to which an output signal of the intermediate frequency filter is supplied,

wherein, by switching said addition/subtraction circuit to perform addition or subtraction, the signals of said first plurality of programs or the signals of said second plurality of programs are selectively extracted from said demodulation circuit.

--4. (Amended) The receiving device according to Claim 3, wherein, when each of said first ensemble and said second ensemble has a terrestrial-wave signal and a satellite-wave signal which are frequency-divided,

said intermediate frequency filter comprises first and second intermediate frequency filters,

said demodulation circuit comprises first and second demodulation circuits,

the output signal of said addition/subtraction circuit is supplied to each of said first and second intermediate frequency filters, whereby the intermediate frequency signal of said terrestrial-wave signal and the intermediate frequency signal of said satellite-wave signal are extracted from said first and second intermediate frequency filters, and

the intermediate frequency signals output from said first and

second intermediate frequency filters are supplied to said first and second demodulation circuits, respectively.

--5. (Amended) A receiving device comprising:

a receiving circuit for receiving a first signal and a second signal transmitted at mutually different frequencies;

a circuit for forming first and second local oscillation signals having frequencies at a center frequency between said first signal and said second signal and having phases that differ by 90° from each other;

a first mixer circuit for frequency-converting the received signal received by said receiving circuit into a first intermediate frequency signal in accordance with said first local oscillation signal;

a second mixer circuit for frequency-converting the received signal received by said receiving circuit into a second intermediate frequency signal in accordance with said second local oscillation signal;

a first phase-shift circuit to which said first intermediate frequency signal is supplied;

a second phase-shift circuit to which said second intermediate frequency signal is supplied, in which the amount of phase shift in said second phase-shift circuit differs by 90° from an amount of

phase shift of said first phase-shift circuit; and

an addition circuit for performing addition of the output signal of said first phase-shift circuit and the output signal of said second phase-shift circuit; and

a circuit for selectively inverting or non-inverting the phase of one of the output signal of said first phase-shift circuit and the output signal of said second phase-shift circuit supplied to said addition circuit,

wherein, by switching between said inverting or said non-inverting, the intermediate frequency signal corresponding to said first signal or the intermediate frequency signal corresponding to said second signal is selectively extracted from said addition circuit.

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--6. (Amended) The receiving device according to Claim 5, wherein said circuit for selectively inverting or non-inverting is a circuit for inverting or non-inverting the phase of one of the signals of said first and second local oscillation signals.

--7. (Amended) The receiving device according to Claim 5, wherein said circuit for selectively inverting or non-inverting is a circuit for inverting or non-inverting the phase of one of the signals of said first and second intermediate frequency signals.

--8. (Amended) A receiving device for receiving a multiplexed signal in which a first ensemble having signals of a first plurality of programs and a second ensemble having signals of a second plurality of programs are frequency-multiplexed and transmitted and for extracting from the multiplexed received signal one of the signals within said signals of the first plurality of programs and said signals of the second plurality of programs, said receiving device comprising:

a circuit for forming first and second local oscillation signals having frequencies at a center frequency between said first ensemble and said second ensemble and having phases that differ by 90° from each other;

a first mixer circuit for frequency-converting the received signal into a first intermediate frequency signal in accordance with said first local oscillation signal;

a second mixer circuit for frequency-converting the received signal into a second intermediate frequency signal in accordance with said second local oscillation signal;

a first phase-shift circuit to which said first intermediate frequency signal is supplied;

a second phase-shift circuit to which said second intermediate frequency signal is supplied, in which an amount of in said second phase-shift circuit phase shift differs by 90° from an amount of

phase shift of said first phase-shift circuit;

an addition circuit for performing addition of the output signal of said first phase-shift circuit and the output signal of said second phase-shift circuit; and

a circuit for selectively inverting or non-inverting the phase of one of said first and second intermediate frequency signals,

wherein, by switching between said inverting or said non-inverting, the intermediate frequency signal corresponding to said first signal or the intermediate frequency signal corresponding to said second signal is selectively extracted from said addition circuit.

--9. (Amended) The receiving device according to Claim 8, further comprising:

an intermediate frequency filter to which the output signal of said addition circuit is supplied; and

a demodulation circuit to which an output signal of the intermediate frequency filter is supplied,

wherein, by switching between said inverting or said non-inverting, the signals of said first plurality of programs or the signals of said second plurality of programs are selectively extracted from said demodulation circuit.

--10. (Amended) The receiving device according to Claim 9, wherein, when each of said first ensemble and said second ensemble has a terrestrial-wave signal and a satellite-wave signal which are frequency-divided,

said intermediate frequency filter comprises first and second intermediate frequency filters,

said demodulation circuit comprises first and second demodulation circuits,

the output signal of said addition circuit is supplied to each of said first and second intermediate frequency filters, whereby the intermediate frequency signal of said terrestrial-wave signal and the intermediate frequency signal of said satellite-wave signal are extracted from said first and second intermediate frequency filters, and

the intermediate frequency signals output from said first and second intermediate frequency filters are supplied to said first and second demodulation circuits, respectively.

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--11. (Amended) The receiving device according to Claim 10, further comprising a selecting/combining circuit for selecting or combining the demodulated outputs of said first and second demodulation circuits and for outputting the demodulated outputs.

--12. (Amended) The receiving device according to Claim 8, wherein said circuit for selectively inverting or non-inverting is a circuit for inverting or non-inverting the phase of one of the signals of said first and second local oscillation signals.

--13. (Amended) The receiving device according to Claim 8, wherein said circuit for selectively inverting or non-inverting is a circuit for inverting or non-inverting the phase of one of the signals of said first and second intermediate frequency signals.

--14. (Amended) An integrated circuit for reception comprising:

a high-frequency amplifier for receiving a first signal and a second signal transmitted at mutually different frequencies;

a circuit for forming first and second local oscillation signals having frequencies at a center frequency between said first signal and said second signal, and having phases that differ by 90° from each other;

a first mixer circuit for frequency-converting the received signal received by said high-frequency amplifier into a first intermediate frequency signal in accordance with said first local oscillation signal;

a second mixer circuit for frequency-converting the received

signal received by said high-frequency amplifier into a second intermediate frequency signal in accordance with said second local oscillation signal;

a first phase-shift circuit to which said first intermediate frequency signal is supplied;

a second phase-shift circuit to which said second intermediate frequency signal is supplied, in which an amount of phase shift in said second phase-shift circuit differs by 90° from an amount of phase-shift of said first phase-shift circuit; and

an addition/subtraction circuit for switchably performing one of addition and subtraction between an output signal of said first phase-shift circuit and an output signal of said second phase-shift circuit, which are integrated into one chip,

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wherein, by switching said addition/subtraction circuit to perform addition or subtraction, the intermediate frequency signal corresponding to said first signal or the intermediate frequency signal corresponding to said second signal is selectively extracted from said addition/subtraction circuit.

--15. (Amended) A reception integrated circuit for receiving a multiplexed signal in which a first ensemble having signals of a first plurality of programs and a second ensemble having signals of a second plurality of programs are frequency-multiplexed and

transmitted and for extracting from the multiplexed received signal one of the signals within the signals of said first plurality of programs and the signals of said second plurality of programs, said reception integrated circuit comprising:

a circuit for forming first and second local oscillation signals having frequencies at a center frequency between said first ensemble and said second ensemble and having phases that differ by 90° from each other;

a first mixer circuit for frequency-converting the received signal into a first intermediate frequency signal in accordance with said first local oscillation signal;

a second mixer circuit for frequency-converting the received signal into a second intermediate frequency signal in accordance with said second local oscillation signal;

a first phase-shift circuit to which said first intermediate frequency signal is supplied;

a second phase-shift circuit to which said second intermediate frequency signal is supplied, in which an amount of phase shift in said second phase-shift circuit differs by 90° from that an amount of phase shift of said first phase-shift circuit;

an addition/subtraction circuit for switchably performing one of addition and subtraction between the output signal of said first phase-shift circuit and the output signal of said second

phase-shift circuit;

an intermediate frequency filter to which an output signal of the addition/subtraction circuit is supplied; and

a demodulation circuit to which an output signal of the intermediate frequency filter is supplied,

wherein, by switching said addition/subtraction circuit to perform addition or subtraction, the signals of said first plurality of programs or the signals of said second plurality of programs are selectively extracted from said demodulation circuit.

--16. (Amended) A reception integrated circuit comprising:

a high-frequency amplifier for receiving a first signal and a second signal transmitted at mutually different frequencies;

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a circuit for forming first and second local oscillation signals having frequencies at a center frequency between said first signal and said second signal, and having phases that differ by 90° from each other;

a first mixer circuit for frequency-converting the received signal received by said high-frequency amplifier into a first intermediate frequency signal in accordance with said first local oscillation signal;

a second mixer circuit for frequency-converting the received signal received by said high-frequency amplifier into a second

intermediate frequency signal in accordance with said second local oscillation signal;

a first phase-shift circuit to which said first intermediate frequency signal is supplied;

a second phase-shift circuit to which said second intermediate frequency signal is supplied, in which an amount of phase shift in said second phase-shift circuit differs by 90° from an amount of phase-shift of said first phase-shift circuit;

an addition circuit for performing addition of the output signal of said first phase-shift circuit and the output signal of said second phase-shift circuit; and

a circuit for switchably inverting or non-inverting the phase of one of the output signal of said first phase-shift circuit and the output signal of said second phase-shift circuit supplied to said addition circuit, which are integrated into one chip,

wherein, by switching between said inverting or said non-inverting, the intermediate frequency signal corresponding to said first signal or the intermediate frequency signal corresponding to said second signal is selectively extracted from said addition circuit.

--17. (Amended) A reception integrated circuit for receiving a multiplexed signal in which a first ensemble having signals of a

first plurality of programs and a second ensemble having signals of a second plurality of programs are frequency-multiplexed and transmitted and for extracting from the multiplexed received signal one of the signals within the signals of said first plurality of programs and the signals of said second plurality of programs, said reception integrated circuit comprising:

a circuit for forming first and second local oscillation signals having frequencies at a center frequency between said first ensemble and said second ensemble and having phases that differ by 90° from each other;

a first mixer circuit for frequency-converting the received signal into a first intermediate frequency signal in accordance with said first local oscillation signal;

a second mixer circuit for frequency-converting the received signal into a second intermediate frequency signal in accordance with said second local oscillation signal;

a first phase-shift circuit to which said first intermediate frequency signal is supplied;

a second phase-shift circuit to which said second intermediate frequency signal is supplied, in which an amount of phase shift in said second phase-shift circuit differs by 90° from an amount of phase-shift of said first phase-shift circuit;

an addition circuit for performing addition of an output

signal of said first phase-shift circuit and an output signal of said second phase-shift circuit;

an intermediate frequency filter to which an output signal of the addition circuit is supplied;

a demodulation circuit to which the output signal of an intermediate frequency filter is supplied; and

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a circuit for selectively inverting or non-inverting the phase of one of the output signal of said first phase-shift circuit and the output signal of said second phase-shift circuit supplied to said addition circuit, which are integrated into one chip,

wherein, by switching between said inverting or said non-inverting, the signals of said first plurality of programs and the signals of said second plurality of programs are selectively extracted from said demodulation circuit.